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What is claimed is:

1. An enhanced inserted yellow fluorescence protein, wherein  
the 145<sup>th</sup> amino acid of YFP (yellow fluorescence protein)  
5 comprises amino acid sequence of YGGSGAS (SEQ.ID No.: 1).
2. A nucleic acid sequence encoding the enhanced inserted  
yellow fluorescence protein as claimed in claim 1.
- 10 3. The nucleic acid sequence as claimed in claim 2 comprising  
BamHI and NheI restriction enzyme recognition sites.
4. The enhanced inserted yellow fluorescence protein as  
claimed in claim 1, wherein the 192nd amino acid of Prolin is  
15 replaced by Leucin (SEQ.ID No.: 2).
5. A nucleic acid sequence encoding the enhanced inserted  
yellow fluorescence protein as claimed in claim 4.
- 20 6. The enhanced inserted yellow fluorescence protein as  
claimed in claim 1 or claim 4 comprising foreign peptide or  
protein, or a part of protein.
7. A nucleic acid sequences encoding the enhanced inserted

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yellow fluorescence protein as claimed in claim 6.

8. The enhanced inserted yellow fluorescence protein as  
claimed in claim 6 comprising NS3 protease's substrate  
5 recognition site of human Hepatitis C virus (HCV NS3).

9. A nucleic acid sequence encoding the enhanced inserted  
yellow fluorescence protein as claimed in claim 8.

10 10. The enhanced inserted yellow fluorescence protein as  
claimed in claim 6, wherein peptide or protein, or a part of  
protein binds calcium.

11. A nucleic acid sequence encoding the enhanced inserted  
15 yellow fluorescence protein as claimed in claim 10.

12. The enhanced inserted yellow fluorescence protein as  
claimed in claim 6 comprising DEVD amino acid sequence  
recognized by caspase.

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13. A nucleic acid sequence encoding the enhanced inserted  
yellow fluorescence protein as claimed in claim 12.

14. A bioactivity assay system, for use *in vivo* or *in vitro*,

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comprising the enhanced inserted yellow fluorescence protein  
as claimed in claim 6.

15. A biosensor, for use *in vivo* or *in vitro*, comprising the  
5 enhanced inserted yellow fluorescence protein as claimed in  
claim 1 or claim 4.